

MASTER OF SCIENCE IN METEOROLOGY AND PHYSICAL OCEANOGRAPHY

METOC AND NAVAL AFLOAT OPERATIONS: RISK MANAGEMENT, SAFETY, AND READINESS

**Brett S. Martin-Lieutenant Commander, United States Navy
B.S., State University of New York, 1991**

Master of Science in Meteorology and Physical Oceanography-December 2002

Advisor: Tom Murphree, Department of Meteorology

Second Reader: Carlyle H. Wash, Department of Meteorology

The METOC aspects of ORM, safety, and readiness in Naval afloat operations were investigated. The purpose of this work was to identify and develop methods by which the METOC community can better contribute to these components of Naval operations. Records of class A, B and C afloat mishaps during March 1997 – March 2002 from the NSC were the primary data source for this study. The major objectives in analyzing this data were to identify: (1) METOC related mishaps (MRMs); (2) the costs of these mishaps; and (3) the phenomenological and operational conditions under which these mishaps occurred. 166 MRMs during the study period were identified. The major average costs of these mishaps were: (1) 1.5 deaths per year; (2) 16 days of lost duty per MRM; (3) 11 days of light duty per MRM; (4) 150 days of lost or light duty per year due to MRMs involving small boat operations; and (5) \$54,000 in equipment damage per MRM. The major METOC phenomena involved in underway MRMs were high winds and seas, which occurred in over half the MRMs. Eighty-four percent of the MRMs involved deficiencies in training on how to deal with adverse METOC conditions.

KEYWORDS: Naval Afloat Mishaps, METOC Phenomena, Human Error, Accident Classification, Accident Analysis, Surface Weather, Operational Risk Management (ORM), Readiness